

(12)特許協力条約に基づいて公開された国際出願

(19) 世界知的所有権機関
国際事務局(43) 国際公開日
2003 年 12 月 24 日 (24.12.2003)

PCT

(10) 国際公開番号
WO 03/106154 A1(51) 国際特許分類⁷: B30B 15/14, 1/26

特願2003-145374 2003 年 5 月 22 日 (22.05.2003) JP

特願2003-145377 2003 年 5 月 22 日 (22.05.2003) JP

(21) 国際出願番号: PCT/JP03/07675

(22) 国際出願日: 2003 年 6 月 17 日 (17.06.2003)

(25) 国際出願の言語: 日本語

(26) 国際公開の言語: 日本語

(30) 優先権データ:

特願2002-177145 2002 年 6 月 18 日 (18.06.2002) JP

特願2002-177143 2002 年 6 月 18 日 (18.06.2002) JP

特願2002-177150 2002 年 6 月 18 日 (18.06.2002) JP

特願2002-177149 2002 年 6 月 18 日 (18.06.2002) JP

特願2003-145372 2003 年 5 月 22 日 (22.05.2003) JP

(71) 出願人 (米国を除く全ての指定国について): 株式会社アマダ (AMADA COMPANY, LIMITED) [JP/JP]; 〒259-1196 神奈川県伊勢原市石田200番地 Kanagawa (JP). 株式会社エヌエスエンジニアリング (NS ENGINEERING, INC.) [JP/JP]; 〒259-1116 神奈川県伊勢原市石田318-3 Kanagawa (JP).

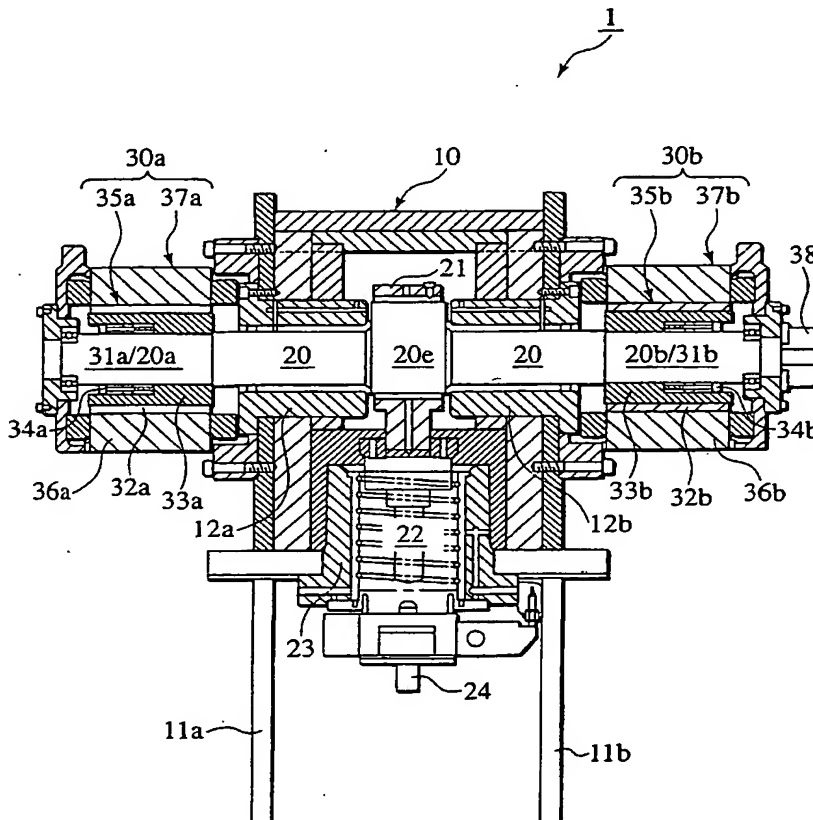
(72) 発明者; および

(75) 発明者/出願人 (米国についてのみ): 内藤 欽志郎 (NAITO, Kinshiro) [JP/JP]; 〒259-1116 神奈川県伊勢原市石田318-3 Kanagawa (JP). 関山 篤蔵 (SEKIYAMA, Tokuzo) [JP/JP]; 〒370-2217 群馬県甘楽郡甘楽町天引258番地 Gunma (JP). 大竹 俊昭 (OTAKE, Toshiaki) [JP/JP]; 〒259-1196 神奈川県伊

[続葉有]

(54) Title: SERVO-DRIVE SYSTEM AND CONTINUOUS FINISHING SYSTEM OF PRESS

(54) 発明の名称: プレス機械における、サーボドライブシステム及び連続加工システム



(57) Abstract: A servo-drive system of a press, wherein a pair of servo-motors (30a, 30b) as the power sources of a ram (22) capable of generating a necessary ram pressure by using a torque obtained by synthesizing the same torques based on speed-torque characteristics are mirror-images of each other and installed, opposite to each other, at both ends of an operating shaft (20) vertically moving the ram (22), whereby the operating shaft (20) can be directly driven by operating the pair of servo-motors (30a, 30b) as an integral part.

(57) 要約: ラム 22 の動力源として、互いに同一の速度-トルク特性に基づくトルクを合成して使うことで必要なラム圧力を発生可能な一対のサーボモータ 30a、30b を、互いにミラーイメージで対称に構成し、ラム 22 を上下動させる作動軸 20 の両端に互に対向して設置する。この一対のサーボモータ 30a、30b を一体として動作させることで、作動軸 20 を直接駆動する、プレス機械のサーボドライブシステムである。



勢原市 石田200番地 株式会社アマダ内 Kanagawa (JP). 栗山 晴彦 (KURIYAMA, Haruhiko) [JP/JP]; 〒259-1196 神奈川県 伊勢原市 石田200番地 株式会社アマダ内 Kanagawa (JP).

(74) 代理人: 三好 秀和 (MIYOSHI, Hidekazu); 〒105-0001 東京都 港区 虎ノ門1丁目2番3号 虎ノ門第一ビル3階 Tokyo (JP).

(81) 指定国 (国内): CN, KR, US.

(84) 指定国 (広域): ヨーロッパ特許 (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).

添付公開書類:

— 国際調査報告書

2文字コード及び他の略語については、定期発行される各PCTガゼットの巻頭に掲載されている「コードと略語のガイダンスノート」を参照。

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/07675

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl⁷ B30B15/14, B30B1/26

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ B30B15/14, B30B1/26, H02P6/08, H02K1/27

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1922-1996	Jitsuyo Shinan Toroku Koho	1996-2003
Kokai Jitsuyo Shinan Koho	1971-2003	Toroku Jitsuyo Shinan Koho	1994-2003

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	JP 2001-62596 A (NS Engineering Corp., Amada Co., Ltd., Kabushiki Kaisha Sogo Anzen Gijutsu Center), 13 March, 2001 (13.03.01), Par. Nos. [0040] to [0079]; Figs. 1 to 11 (Family: none)	1-3, 7, 9 4-6, 8, 10-18
X Y	JP 2000-288792 A (Amada Co., Ltd.), 17 October, 2000 (17.10.00), Par. Nos. [0038] to [0070]; Figs. 1 to 4 (Family: none)	1-3, 7, 9 4-6, 8, 10-18
Y	JP 8-215896 A (Tamagawa Mashinari Kabushiki Kaisha), 27 August, 1996 (27.08.96), Par. Nos. [0032], [0042]; Fig.1 (Family: none)	4, 8, 10, 13, 16

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
10 September, 2003 (10.09.03)Date of mailing of the international search report
24 September, 2003 (24.09.03)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/07675

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 0866540 A (ELECTRIC BOAT CORP.), 23 September, 1998 (23.09.98), & US 5952755 A & JP 10-327548 A Par. No. [0045]; Figs. 1, 2	5, 6
Y	JP 2001-62591 A (Amada Co., Ltd., NS Engineering Corp., Kabushiki Kaisha Sogo Anzen Gijutsu Center), 13 March, 2001 (13.03.01), Par. Nos. [0088] to [0104], [0109]; Figs. 8 to 10 (Family: none)	11, 14
Y	JP 8-108229 A (Murata Machinery Ltd.), 30 April, 1996 (30.04.96), Par. Nos. [0019], [0023]; Fig. 1 (Family: none)	11, 14
Y	JP 54-105716 A (Hitachi, Ltd.), 20 August, 1979 (20.08.79), Page 1, right column, lines 5 to 17; Figs. 1, 4 (Family: none)	17, 18
Y	JP 2001-276467 A (Sharp Corp.), 09 October, 2001 (09.10.01), Full text; Fig. 3 (Family: none)	17, 18
P, Y	JP 2002-210600 A (Yamada Dobby Co., Ltd.), 30 July, 2002 (30.07.02), Par. Nos. [0012], [0013], [0046] to [0049]; Fig. 4 (Family: none)	11, 14